

GeoGebra implementation strategy in the curriculum of secondary school

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Abstract : *The current curriculum has been developed in terms of transition from curriculum-centered design model aims to model-centered skills. Adopting this model of curriculum design is driven by the need to update the format and for unit design curricula at the secondary and college school level.*

Mathematics curricula

Mathematics curricula are designed so as not to obstruct, by conception or wording, the freedom of the teacher in educational activities. With the completion of specific skills (and, implicitly, the general powers) and full browsing of content programs, the teacher can:

- browsing sequence, choose content items (while taking into account the internal logic of science);
- to group in different ways for content in units of learning, respecting the internal logic of development of mathematical concepts;
- to choose or organize learning activities appropriate to the concrete class.

Starting from the general competencies:

- identification data and mathematical relationships and their correlation to the context in which they were defined ;
- data processing type quantity, quality, structure, context statements contained in mathematical;
- use mathematical algorithms and concepts for local and global characterization of a concrete situation;
- mathematical expression of quantitative or qualitative characteristics in a concrete situation and their processing algorithms;
- analyze and interpret mathematical characteristics of a situation-problem;
- mathematical modeling of different problem contexts, by integrating knowledge from different fields.

GeoGebra can say is the platform we need to:

- developing an open and creative thought, developing initiative, independence in thought and action to be willingness to tackle various tasks;
- show tenacity, perseverance and ability to focus attention distributive
- developing the spirit of observation;

- developing a sense of esthetic and critical capacity to assess the rigor, order and elegance in architecture solve a problem or construct a theory;
- custom training to use mathematical concepts and methods in addressing everyday situations or to solve practical problems;
- training motivation to study mathematics as an area relevant to social and professional life.

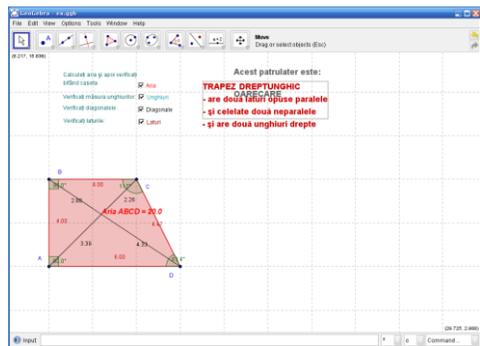
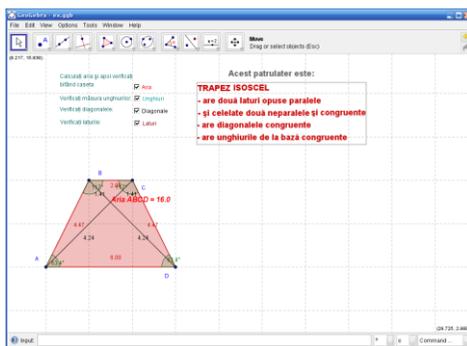
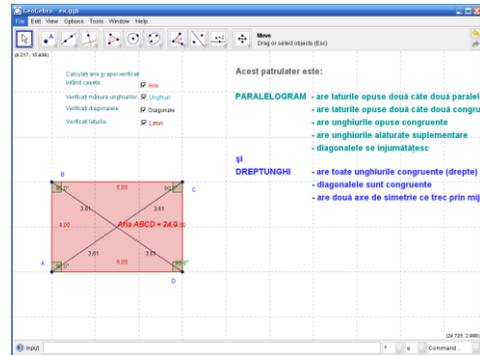
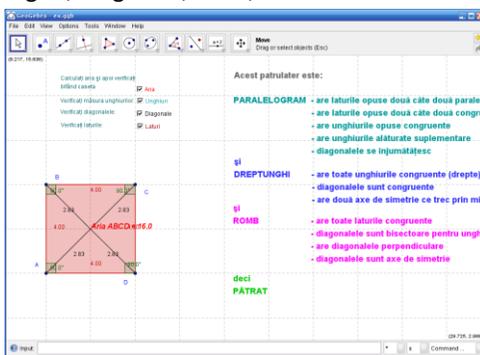
Seventh grade when pursuing specific skills:

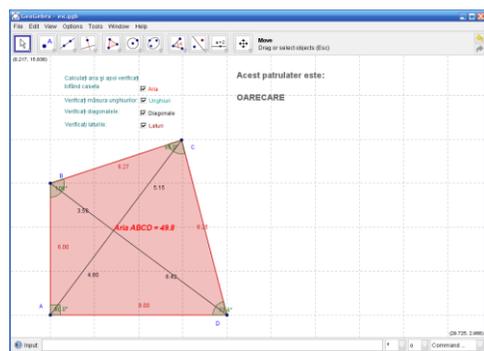
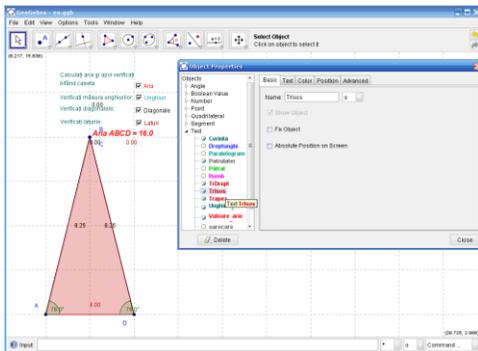
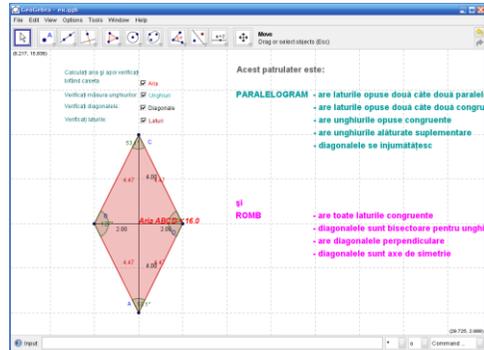
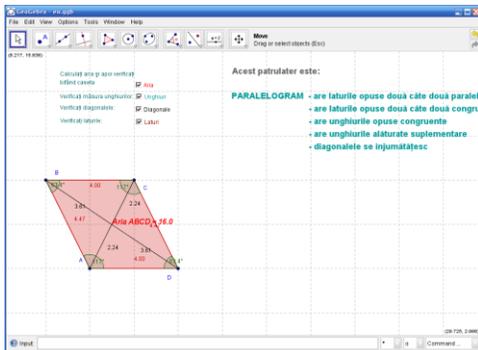
- recognize and describe geometric configurations patrulaterelor the data;
- identify the properties specified using private patrulaterelor;
- use of qualitative and metric properties patrulaterelor in solving problems;
- expressing the geometric representation of the concepts related to quadrilaterals;
- choosing appropriate representations to optimize the geometric calculations segments lengths, angles and action areas;
- interpretation of information derived from geometric representations in relation to some practical situations

then we can use GeoGebra to these contents:

- convex quadrilateral - (definition, design);
- sum measures the angles of a convex quadrilateral;
- parallelogram; properties;
- particular parallelogram : rectangle, diamond and square properties;
- trapezoids, classification; isosceles trapezoid, properties;
- areas (triangles, quadrilaterals).

If I had to exemplify the use of the platform, we can achieve these geometric shapes (square, rectangle, trapezoid, rhombus, parallelogram etc..) on which we calculate: area, angles, diagonals, sides, etc.





GeoGebra platform:

- No risk of malicious, or other problems like this.
- Installation takes not more than two minutes.
- Does not occupy computer memory.

The drawing above is presented in an application of this platform for field grade VII: Quadrilaterals.

Drawn Quadrilaterals can be changed by pulling their tails.

This can get: parallelogram, rectangle, diamond or square.

Depending on the quadrangle built, its properties appear in the right.

Also appear four check box with the following meanings:

1. Area - checking the box displays drawing the quadrilateral area;
2. Angles - ticking the box displays the four angles measures;
3. Diagonal - ticking the box appears and displays the lengths of diagonals drawn segments having a quadrilateral at the top end and one end point of intersection of these diagonals;
4. Sides - by ticking the box side, is show length sides of quadrilateral drawn.

Thus, you can check the properties of angles, sides or diagonals and also to check whether students have correctly calculated the area of quadrilateral drawn.

Conclusions

Addressing major current references in mathematics teaching-learning-assessment is shift in emphasis from teaching information skills training for the application of knowledge gained to develop pupils' creativity by:

- Development of teaching strategies based on specific skills in school curricula;
- Ensuring continuity and progress from one class to another, seeking student centered, the topic of instructional and educational activities;

- Ensuring correlation between the specific skills and learning content, taking account of the needs of learning, the student's age and the time available to study it;
- Ensuring consistency in the discipline and the curricular area correlation;
- Emphasizing practical-applicative nature of teaching approach by removing some aspects that put it at a very theoretical.

Thus, it is useful in the teaching process to consider:

- Building a variety of contexts problematic, likely to produce out to different areas of mathematics;
- Use different strategies to solve the same problems when appropriate;
- Organization of various learning activities for students, in teams and / or individually according to their level and pace of development of each;
- Construction of learning sequences allowing exploration / investigation to the basic concepts studied.

Proposals to meet teachers wishing to apply GeoGebra platform: a course in the Teachers' House by the following structure:

Type of program:	Thematic Programme
Target audience	professor of mathematics, computer science, physics, chemistry, biology, in urban and rural
Justification (necessity, utility)	For some of us (teachers from different disciplines) on computers in terms of "computer", the producer of programs and user programs do not suggest this project ongoing desire to the computer in the context of a successful teaching approach. We believe that the teacher, regardless of specialty will be taught to know what was in the magic box (called generic computer) but will be aware that magic box that will help help students to learn, enjoyable way to becoming knowledge!
Planning a thematic modules	1.Point of clarification and conceptual, operational objectives – 6 hours 2.Study curriculum, school progremelor analysis in European education system – 6 hours 3.Teaching design – 6 hours 4.End-point assessment in teaching and learning – 4 hours 5.Summative evaluation – 2 hours
Curriculum Program:	<p>PURPOSE: Improving skills in school education teachers on the use of multimedia techniques to support teaching and learning lessons in anticipation of development of the knowledge society.</p> <p>OBJECTIVES: Developing skills of school education to use interactive teaching tools and specific application GeoGebra ICT use in Europe and promoted by the European Union Develop and implement programs in their curriculum and school curriculum decision. Increasing the number of teachers who receive training programs continue. Supporting teachers from disadvantaged backgrounds or its activity in these environments. Familiarity with software tools / hardware and development of teachers in the use of techniques preuniversitar media. Participation in further training, can be seen as an extension of the skills acquired in initial training, certification obtained by the participants is key to career development and new skills will facilitate development works similar to obtain the trade of teaching degree. Transfer the results to students that will lead to increased competitiveness in competitions at local, national and even international.</p> <p>ACTIVITIES: The training includes both theoretical work and practical applications aimed at computer skills and use of active-participatory methods and strategies and implementing alternative methods of assessment.</p> <p>RESULTS: This project will generate a positive effect in improving the capacity of teachers to use interactive teaching methods and learning and ICT, and acquisition by secondary school students and college and professional competencies necessary for key involvement in research activities in areas related disciplines studied (eg, processing and retrieval of images). It will create a modern educational system responsive to technological expansion, which will contribute significantly to developing a knowledge-based society.</p>